

THE PROPERTIES OF ALTUGLAS

MAIN CHARACTERISTICS

INDICATIVE VALUES

	TEST METHOD			UNITS	ALTUGLAS CN		ALTUGLAS EX	
	ISO	NF	Others		Thick mm	Value	Thick mm	Value
GENERAL PROPERTIES								
Water absorbtion, 24 hrs. :	R 62	T 51002	DIN 53495	%	4	0.30	4	0.30
Water absorbtion, 8 days	R 62	T 51002	DIN 53495	%	4	0.50	4	0.50
Water absorbtion, max. (total immersion, 1200 hrs.)			Interne	%	3	1.75	3	1.75
Density	R 1183	T 51063	DIN 53479			1.19		1.19
MECHANICAL PROPERTIES								
Poisson ratio to 20°C						0.39		0.39
Tensile strength to 23°C	R 527	T 51034	DIN 53455					
Stress at break				MPa	4	76	4	74
Modulus of elasticity				MPa	4	3300	4	3300
Elongation at break				%	4	6	4	5
Tensile strenght to - 20°C	R 527	T 51034	DIN 53455					
Stress at break				MPa	4	102		
Elongation at break				%	4	5		
Tensile strength to 80°C	R 527	T 51034	DIN 53455					
Stress at break				MPa	4	24		
Elongation to break				%	4	22		
Flexural strength to 23°C	178	T 51001	DIN 53452					
Stress at break				MPa	4	140	4	120
Modulus of elasticity				MPa	4	3000	4	3000
Charpy impact strength (un-notched)	179/1D	T 51035	DIN 53453	Kj/m ²	4	12	4	10
Impact strength (notched)	R 180		ASTM D256A	Kj/m ²	4	1.4	4	1.3
Hardness, Rockwell Scale M	D 2039		ASTM D 785			95		90
Hardness, Shore Scale D	R 868	T 51109				60-70		80
Compressive strength	R 684	T 51101	DIN 53454	MPa	4	130	4	110
Shear strength - dynamic modulus			DIN 53445	MPa		1700		1700
OPTICAL PROPERTIES								
Light transmittance	T 51068	DIN 5036						
3 mm thick				%	3	> 92	3	> 92
5 mm thick				%	5	> 92	5	> 92
9 mm thick				%			8	> 92
10 mm thick				%	10	> 92		
Refractive index	T 51064	DIN 53491				1.492		1.492

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	TEST METHOD			UNITS	ALTUGLAS CN		ALTUGLAS EX	
	ISO	NF	Others		Thick mm	Value mm	Thick mm	Value mm
ELECTRICAL PROPERTIES								
Dielectric strength		C 26225	DIN 53481	KV/mm		20 to 25		20 to 25
Transverse resistivity		C 26215	DIN 53482	Ohm.cm		> 10 ¹⁵		> 10 ¹⁵
Dielectric constant		C 26230	DIN 53483					
to 50 Hz						3.7		3.7
to 1 MHz						2.6		2.6
THERMAL PROPERTIES								
Coefficient of linear expansion	EN 2155-1	T 51251	DIN 52328	mm/m/°C		0.065		0.070
Thermal conductivity			DIN 52612	W/m/°C		0.17		0.19
Specific heat			ASTM C 351	J/g/°C		1.32		1.32
Insulation coefficient K			DIN 4701					
3 mm thick				W/m ² /°C	3	5.3	3	5.3
5 mm thick				W/m ² /°C	5	5.1	5	5.1
10 mm thick				W/m ² /°C	10	4.5	10	4.5
Vicat softening point B 10/10, conditioned samples	R 306	T 51021	DIN 53460	°C		> 110		> 103
Heat distortion temperature under load, 1.8 N/mm ² , conditioned samples	R 75/A	T 51005	DIN 53461	°C		109		102
Max. continuous service temperature				°C		85		80
Forming oven temperature				°C		130-180		140-170
Max. heating temperature				°C		200		190
Max. linear shrinkage after heating, thickness ≥ 3 mm				%		2		3
Max. linear shrinkage after heating, thickness < 3 mm				%		2		6
Max. superficial temperature under infra-red				°C		230		210
Degradation onset temperature				°C		285		240
FLAMMABILITY								
Self-ignition temperature				°C		approx. 430		approx. 430
Flame resistance (Radiant heat source)		P 92501			3	M4		M4
Melt behaviour when burning		P 92505			3	non-drip		drips
Flame resistance			DIN 4102			B2		B2
Flame resistance			BS 476 Pt. 7			class 3		class 4
Flame resistance			UL 94			HB		HB
Limiting Oxygen Index		T 5107	ASTM 2863 77	%		18		18
Chlorine content				%		0		0
Nitrogen content				%		< 0.02		< 0.02

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